

CLAIMS

1. An in-vehicle information processing device which is a communication terminal for communicating wirelessly via an ad-hoc wireless communication network by transmitting and receiving information without using an access point, said device comprising:
 - 5 a road shape storage unit operable to store road shape data;
 - 10 a propagation path derivation unit operable to derive propagation path data from information received by a driver's vehicle, using position data of another vehicle from which the information is propagated;
 - 15 a determination unit operable to determine whether or not the propagation path data matches the road shape data, and to generate match information in a case that the propagation path data matches the road shape data; and
 - 20 a notification unit operable to notify the driver of the received information in a case that the match information is generated.
2. The in-vehicle information processing device according to
20 Claim 1,
 - wherein said propagation path derivation unit is further operable to derive propagation direction data, and
 - 25 said determination unit is further operable to determine whether or not the propagation direction data indicates that a direction of the propagation path is towards the driver's vehicle, and to generate the match information in a case that the propagation direction data indicates that the direction of the propagation path is towards the driver's vehicle.
- 30 3. The in-vehicle information processing device according to any one of Claims 1 and 2,
 - wherein said determination unit is further operable to

determine whether or not the propagation path data matches road shape data of a road ahead in a traveling direction of the driver's vehicle, and to generate the match information in a case that the propagation path data matches the road shape data.

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4. The in-vehicle information processing device according to any one of Claims 1 and 2,

wherein said determination unit is further operable to determine whether or not the propagation path data matches road shape data of a road in a wheeling direction of the driver's vehicle, and to generate the match information in a case that the propagation path data matches the road shape data.

10 5. The in-vehicle information processing device according to any one of Claims 1 through 4,

wherein said road shape storage unit further includes route data indicating a shape of a route leading to the driver's destination, and

20 said determination unit is further operable to determine whether or not the propagation path data matches the route data, and to generate the match information in a case that the propagation path data matches the route data.

25 6. The in-vehicle information processing device according to any one of Claims 1 through 5,

wherein said propagation path derivation unit uses, as the propagation path data, data derived using travel route data indicating a travel route of the another vehicle included in the received information in a case that a number of the position data of 30 the another vehicle included in the received information is less than a threshold value.

7. The in-vehicle information processing device according to any one of Claims 1 through 6, further comprising:

15 a position data acquisition unit operable to acquire position data of the driver's vehicle;

5 an data adding unit operable to generate relay information by adding the position data of the driver's vehicle to the received information in a case that the information is received; and

10 a transmitting unit operable to transmit the relay information.

15 8. The in-vehicle information processing device according to Claim 7, further comprising

10 a travel route memory unit operable to accumulate a plurality of travel route data of the driver's vehicle which are acquired for a specific time period,

15 wherein said data adding unit is further operable to add the travel route data to the received information.

20 9. The in-vehicle information processing device according to Claim 8,

15 wherein said data adding unit is further operable to add the travel route data to the received information in a case that a number of the relay in the received information is less than the threshold value.

25 10. The in-vehicle information processing device according to any one of Claims 7 through 9, further comprising

15 a sensor operable to acquire vehicle data of the driver's vehicle,

30 wherein said data adding unit is further operable to add the vehicle data of the driver's vehicle acquired by said sensor to the received information.

11. The in-vehicle information processing device according to any one of Claims 1 through 10, further comprising

5 a road incident detection unit operable to detect a road incident using the vehicle data of the driver's vehicle acquired by said sensor,

wherein said transmitting unit is further operable to transmit information regarding the road incident in a case that the road incident is detected by said road incident detection unit.

10 12. The in-vehicle information processing device according to Claim 11,

wherein said transmitting unit is further operable to transmit the travel route data including the plurality of position data of the driver's vehicle acquired for a specific time period.

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13. The in-vehicle information processing device according to any one of Claims 1 through 12, further comprising

20 an information destruction unit operable to destroy the received information in a case that the propagation path data does not match the road shape data.

14. The in-vehicle information processing device according to any one of Claims 2 through 12, further comprising

25 an information destruction unit operable to destroy the received information in a case that the propagation direction data does not indicate that the direction of the propagation path is towards the driver's vehicle.

15. The in-vehicle information processing device according to any 30 one of Claims 1 through 12, further comprising

an information destruction unit operable to destroy the received information in a case that the propagation path data does

not match the road shape data of the road ahead in the traveling direction of the driver's vehicle.

16. The in-vehicle information processing device according to any
5 one of Claims 1 through 12, further comprising

an information destruction unit operable to destroy the received information in a case that the propagation path data does not match the road shape data of the road in the wheeling direction of the driver's vehicle.